

# Bad River Band of Lake Superior Tribe of Chippewa Indians

## Water Quality Monitoring and Designated Uses

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## BRNRD Water Lab Began May 1997

- Multiprobe (Hydrolab, YSI)
- HACH Drel/2010 with spectrophotometer
- Solids by gravimetric methods
- Fecal coliform by membrane filtration then E.coli by Easygel
- Alkalinity/hardness by titration
- Stream discharge Price “mini” & Global flow probe



## Bad River WQS

**No information on water quality prior to 1997**

**Core promulgation effort in 2000**

- Region V Tribes objected on the basis that a core set of WQS would not protect these high quality waters without Reservation specific uses/antideg.
- Region V given “tailored” option
- Bad River Tribe adopted a set of “tailored” WQS in August 2000. No EPA action but WQS remain. Will be updated once TAS achieved.



## Water Monitoring Findings

### Indications of elevated nutrients

- phosphate and nitrate in some areas
- Need to define regional background

### High bacterial levels on the Marengo River during rains

- above state fecal coliform level (200 CFU/mL)
- Above EPA E.coli levels (235 CFU/100 mL)
- Not meeting recreational use for state or Tribe as crosses onto Reservation





Marengo River Data				
E. coli CFU/100 mL				
Date	Tributary	On Reservation	1 mile upstream	2 miles upstream
May-01		122	1380	
Jun-01		144	187	
Jul-01		NS	NS	
Aug-01		160	475	
Sep-01		145	160	
Oct-01		95	65	
Nov-01		30	40	
Dec-01		2530	2070	
Jan-02		16	NS	
Feb-02		44	NS	
Mar-02		45	NS	
Apr-02		80	18	
May-02		46	20	
Aug-02		90	80	
Sep-02		11500	18687	
Feb-03		0	NS	
Apr-03		20	40	
Aug-03		4160	7000	
Oct-03		40	90	
Feb-04		2	NS	
Mar-04	0	0	0	0
Jun-04	40	40	20	20
Aug-04	230	220	220	120
Oct-04	4240	0	20	20
Feb-05	NS	0	NS	NS
Apr-05	20	80	20	20
Jun-05	20	80	60	140
Aug-05	1120	1600	1360	1520
Oct-05	60	0	0	0
<p><i>E.coli</i> - sampled according to Bad River Water Lab Quality Assurance Project Plan approved by the USEPA, 1986 <b>Criteria for Bacteriological Indicators = 235 Ecoli single sample maximum</b></p> <p><b>Tributary</b> - tributary to Marengo River located within the exterior boundary at small farm on south end of Reservation</p> <p><b>1 mile upstream</b> - at the unsewered town of Marengo, approximately 1 mile upstream of the Reservation boundary</p> <p><b>2 miles upstream</b> - at a site surrounded by dairy farms, approximately 2 miles upstream of the Reservation boundary</p> <p>NS - not sampled</p> <p><i>NOTE: The "On Reservation" and "1 mile upstream" sites have also been monitored since 1997 for fecal coliforms as Wisconsin Water Quality Standards use fecal coliforms and not yet E.coli</i></p>				

## CONSIDERATIONS

Sporadically high  
Bacterial counts

No WWTP in Marengo  
-historical evidence of  
Septic problems

Small dairy farms

## “Chased” rain events

	E.coli results (Easygel)				
<u>Marengo River</u>	<u>4/14/2004</u>	<u>4/19/2004</u>	<u>5/17/2004</u>	<u>5/24/2004</u>	<u>6/2/2004</u>
Reimer Road	10	280	520	660	0
Hwy 13	50	480	1460	680	20
Government Rd	30	420	1380	1160	20
water level	2 wks	high flow	high flow	high flow	no rain
	after melt	rain event	rain event	rain event	last few da



## WHAT ELSE?

**WISCAP – Tribal septic inventory, attempts to revive Town of Marengo Sewage District**

- State not monitoring rivers for bacteria**
- Health department not monitoring rivers for bacteria**
- Only data Tribal, not generally accepted by Town of Marengo as reason enough to fix septic.**
- DNR and County staff shortages**

**BRWA participation in volunteer bacterial monitoring  
Focused on same river from headwaters to edge of  
Reservation**

- same findings but samples split with WSLH should lend credence to problem and BRNRD lab method**



## NOW WHAT?

**CWA 303 TAS application in public comment**

**CWA 319 application submitted**

**-emphasizes partnerships and outreach  
for larger watershed issues**

**IRMP updating –used for forestry and soil and  
water protection on Tribal lands**

**Septic inventory, septic ordinance passed**

**Watershed project through WISCAP, EPA funds**

